

Automated Logic's IntelliSuite Solution Simplifies Asset Management With Advanced Analytics

NOVEMBER 2021

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This report forms one in a series providing real estate and facilities management executives with an analysis of the value propositions of smart building solution providers. Automated Logic's IntelliSuite analytics solution combines building automation with the IoT-enabled capabilities of the CORTIX platform to provide insights and targeted recommendations on HVAC equipment managed by Automated Logic's WebCTRL building automation system. The solution leverages machine learning to provide failure prediction and prevention to reduce asset downtime and energy use, increase comfort and optimize capital expenditure planning. This report helps real estate developers, building managers and facilities directors understand the value proposition of the IntelliSuite solution in achieving different strategic business objectives.

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ORGANIZATIONS MENTIONED

Automated Logic, Carrier Global Corporation, EcoEnergy Insights, Energy Manager Today, Lawrence Berkeley National Laboratory, US Department of Energy, US Small Business Administration.

The IntelliSuite Solution Leverages Advanced Analytics To Optimize Energy Use, Maintenance And Capital Investment Plans

Automated Logic – part of Carrier Global Corporation – provides intelligent building solutions that bring together building systems to monitor, manage and enhance their operation and performance. Automated Logic’s software offerings include the WebCTRL building automation system, EnergyReports and the IntelliSuite analytics solution. This report focuses on the IntelliSuite solution, which combines building automation with Internet of Things (IoT) monitoring and artificial intelligence (AI)-driven analytics to provide insights and actionable recommendations on HVAC equipment and network health. To better understand the IntelliSuite offering, Verdantix spoke with and received a demonstration of the solution from Ed Horn, Software Product Manager at Automated Logic.

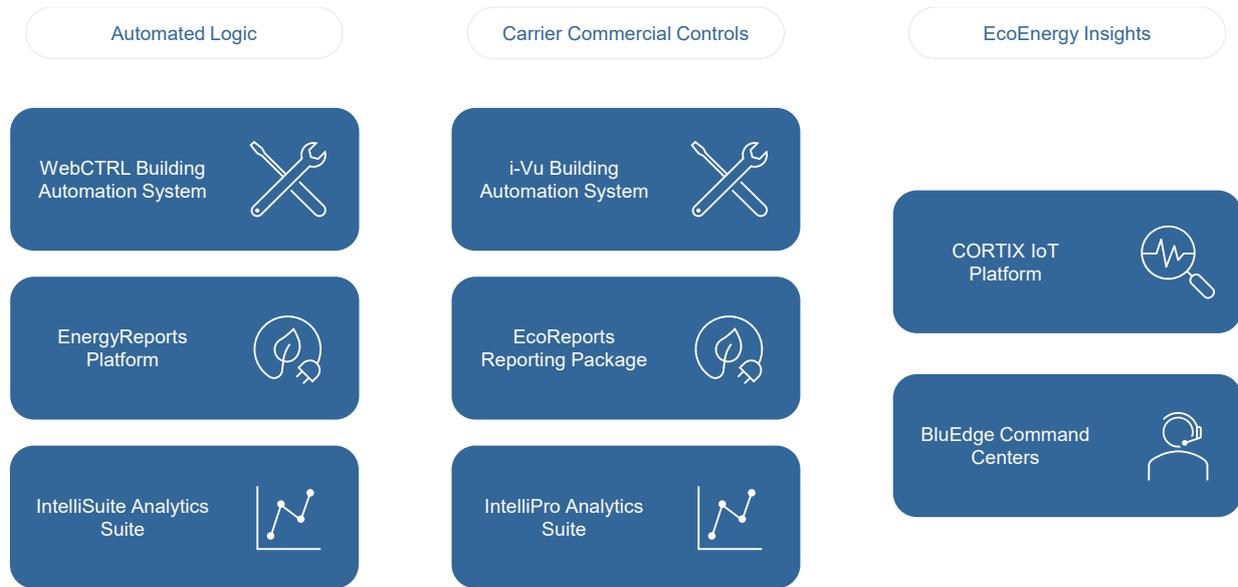
The IntelliSuite Solution Combines Building Automation With Powerful AI Analytics From The CORTIX IoT Platform

In 2020, Automated Logic launched the IntelliSuite offering as its flagship analytics solution to monitor and optimize the performance of buildings. The solution brings together existing capabilities in building analytics, including the energy optimization solution from the CORTIX AI and IoT platform, which is offered by EcoEnergy Insights to predict failures and maintenance issues. The IntelliSuite analytics solution:

- **Works with Automated Logic’s internet-enabled WebCTRL building management system.**
The IntelliSuite solution works in conjunction with Automated Logic’s BACnet-enabled and web-based WebCTRL building management system (BMS). The WebCTRL software solution enables facility managers to manage and control building systems and devices remotely. The system is complemented by the EnergyReports software, which delivers insights on energy usage. Users of the WebCTRL BMS can leverage the IntelliSuite solution to support the monitoring and management of energy usage and occupant comfort, identification of operational problems and analysis of building or portfolio performance. The IntelliSuite solution – also branded as the IntelliPro solution – also works in tandem with the i-Vu building automation system, which is parent company Carrier’s BACnet-enabled, web-based BMS offering.
- **Leverages analytics from the CORTIX IoT platform to minimize downtime and reduce costs.**
The IntelliSuite solution leverages the CORTIX platform, an EcoEnergy Insights offering. EcoEnergy Insights is another subsidiary of Carrier, acquired in 2017, that delivers prescriptive recommendations, predictive analytics and remote control capabilities via the CORTIX platform to drive energy efficiency, and support maintenance management and occupant comfort (see **Figure 1**). By employing the CORTIX platform, the IntelliSuite solution leverages cloud-based predictive AI analytics to monitor and manage the performance and condition of building systems, predicting failures to minimize asset downtime and trigger maintenance promptly to reduce disruption and costs of repair. The insights of the CORTIX platform can also be combined with consulting services provided by the BluEdge Command Centers of EcoEnergy Insights, which operate out of Bangalore in India and Georgia in the US (see [Verdantix Buyer’s Guide: Smart Building IoT Platforms \(2020\)](#)).
- **Provides equipment analytics and network health monitoring for systems managed by the WebCTRL BMS.**
The IntelliSuite asset analytics and network health monitoring solution provides analytics on the operation of building assets, covering four types of HVAC equipment: chillers, rooftop units, air handling

FIGURE 1

Selected Breakdown Of Carrier Global Corporation’s Product Offerings



Sources: Verdantix, Automated Logic

units and variable air volume (VAV) systems. Focusing on HVAC equipment is particularly pertinent, as one estimate from the US Small Business Administration suggests that HVAC systems account for 40% of a building’s energy usage. The IntelliSuite solution takes advantage of the CORTIX platform’s AI assistant to examine these assets in greater detail, identifying and monitoring individual elements of the equipment, such as the controls, electrical and mechanical components of an air handling unit. This higher level of granularity permits more accurate failure prediction and prevention. The IntelliSuite solution also monitors the health of the building automation system (BAS) server and controllers, ensuring that systems remain connected for monitoring, analysis and control purposes.

- **Constitutes a simple software add-on within the WebCTRL offering.**

The IntelliSuite solution is a complementary function to the WebCTRL BMS and is implemented via the CORTIX platform connector add-on. This connection allows data to stream from the WebCTRL BMS to the CORTIX platform for analysis, with the initial connection delivering metadata about the systems available to be onboarded. The user can choose which sets of building systems are connected by choosing the correct geographic or network categorizations. The user can perform this connection process remotely, and the cloud-based nature of the add-on averts the need for a disruptive and expensive on-site hardware installation.

- **Targets building management partners who deliver BMS-related facilities services.**

The IntelliSuite analytics solution is primarily aimed at organizations that provide building management services, such as facility management firms. This sector is undergoing a wave of digitization with service providers adopting technology to improve their decision making and provision of services. The IntelliSuite solution facilitates and simplifies the work of technicians and other service providers by providing insights around systems’ maintenance requirements before conditions develop into system failures. As insights

are displayed as actionable words, users can quickly digest the data, enabling service providers to manage issues promptly, minimizing disruption and costs to the business.

Packaging Advanced Analytics Into Simplified Recommendations Distinguishes The IntelliSuite Solution

The IntelliSuite solution offers cloud-based analytics capabilities, leveraging EcoEnergy Insights's CORTIX AI and IoT platform to augment the building automation functionality offered through the WebCTRL BMS. The solution focuses on the analytics of building HVAC equipment. The IntelliSuite solution transforms complex aspects of building operations into a simple format to drive action and generate value. It achieves this by:

- **Using machine learning to deliver predictive maintenance capabilities.**

Traditionally, building maintenance is highly reactive, relying on threshold-based alarms, which alert building or facility managers only when there is a system failure and disruption to the business has already been introduced. The IntelliSuite solution leverages the CORTIX AI assistant to flag issues earlier in the failure life cycle through predictive actionable insights. The CORTIX platform employs machine learning to understand the performance trends that occur with equipment prior to failure and applies this knowledge to identify early signs of impending defects. By evaluating these predictive maintenance flags ahead of issues manifesting, service providers can deliver an improved service by tackling faults in a pre-emptive manner.
- **Producing easy-to-understand diagnoses and recommendations.**

HVAC faults and the poor scheduling of systems are the source of significant inefficiencies within buildings. Academic research by Lawrence Berkeley National Laboratory found that up to 30% of commercial building energy is wasted as a result of problems with systems' controls. The CORTIX mobile app draws on predictive actionable insights to provide simple, predictive and actionable insights in plain language, so users can understand the nature of the problem with a piece of equipment, the impact of the issue and the corrective action suggested. It also provides an urgency status and highlights how close the equipment is to failure, permitting even non-technical users to understand and make an informed decision on next steps. The app highlights whether the fix can be applied remotely or requires a field visit, so responses are measured and coordinated.
- **Delivering insights through an intuitive mobile app interface.**

The predictive actionable insights (PAIs) from the CORTIX platform are delivered to users across two user interfaces. In addition to a web portal, the intuitive CORTIX platform mobile app, available on both Android and iOS, enables easier access to insights and action recommendations. Service providers can use this app to monitor faults and actions remotely, but it also enables technicians to track issues and apply fixes whilst out in the field via their mobile devices.
- **Employing artificial intelligence to improve recommendations through feedback.**

The CORTIX platform allows users to confirm whether they have implemented the recommendations, enabling the history of workflows on individual pieces of equipment to be tracked. By confirming their actions, users are also highlighting whether the recommendations were useful. Alternatively, the CORTIX app allows users to provide feedback on recommendations. With this function, users can provide comments on how the recommendation was unsuitable or what alternate course of action was more fitting. This feedback is fed into the platform, allowing the AI to learn and apply this knowledge to better diagnose problems and provide more accurate recommendations in the future.

The IntelliSuite Solution Drives Business Improvements Across Key Real Estate Strategic Objectives

The IntelliSuite solution employs AI and machine learning to deliver PAIs to fix equipment issues, pre-empting more significant failures. The CORTIX platform simplifies complex equipment problems into plain language recommendations that can be accessed via an intuitive mobile application. The key business outcomes that are achieved through the IntelliSuite solution are:

- **Maximizing equipment runtime and minimizing business disruption.**

The predictive maintenance capabilities offered by the IntelliSuite solution ensure that issues with building HVAC systems are flagged ahead of failure. By providing recommendations of clear actions, the solution allows fixes to be applied and tracked through to resolution in a prompt manner that minimizes disruption and maintenance costs to the business, whilst maximizing equipment runtime. The recommended actions combined with a simple indicator of whether the fix can be applied remotely or requires a field visit ensures that maintenance responses are timely, measured and coordinated. For example in 2020, one large home improvement retailer saw the remote resolution of, on average, 92% of work orders for lighting and HVAC systems across more than 1,650 stores, after deploying the CORTIX platform.

- **Driving energy savings across building portfolios.**

The top strategic objective for the next three years amongst global executives is the reduction of real estate costs, with decarbonization of building portfolios ranking third (see **Figure 2**). A key method of achieving both objectives is reducing energy usage and subsequently, costs. The IntelliSuite solution drives the optimization of equipment use, enabling firms to find new efficiencies in their day-to-day operations. For example, a specialty retailer for office supplies achieved nearly 8% in energy savings in 23 months across over 1,200 stores through its use of the CORTIX platform. As a result, the retailer won the 2019 Energy Manager Today Project of the Year award.

- **Improving overall occupant comfort and building compliance.**

Improving occupant health and wellbeing is the second most important strategic objective in the next three years for real estate executives. By responding to issues with HVAC equipment in a timely and pre-emptive manner, service providers can ensure that workplace conditions remain optimal for building users, retaining a high level of comfort and wellbeing. A pet care retailer with over 1,450 stores leveraged the CORTIX platform to support their operational efficiency efforts. The deployment of the solution resulted in improved tracking and management of equipment faults, leading to 95% temperature compliance for store operations during the last year of the engagement.

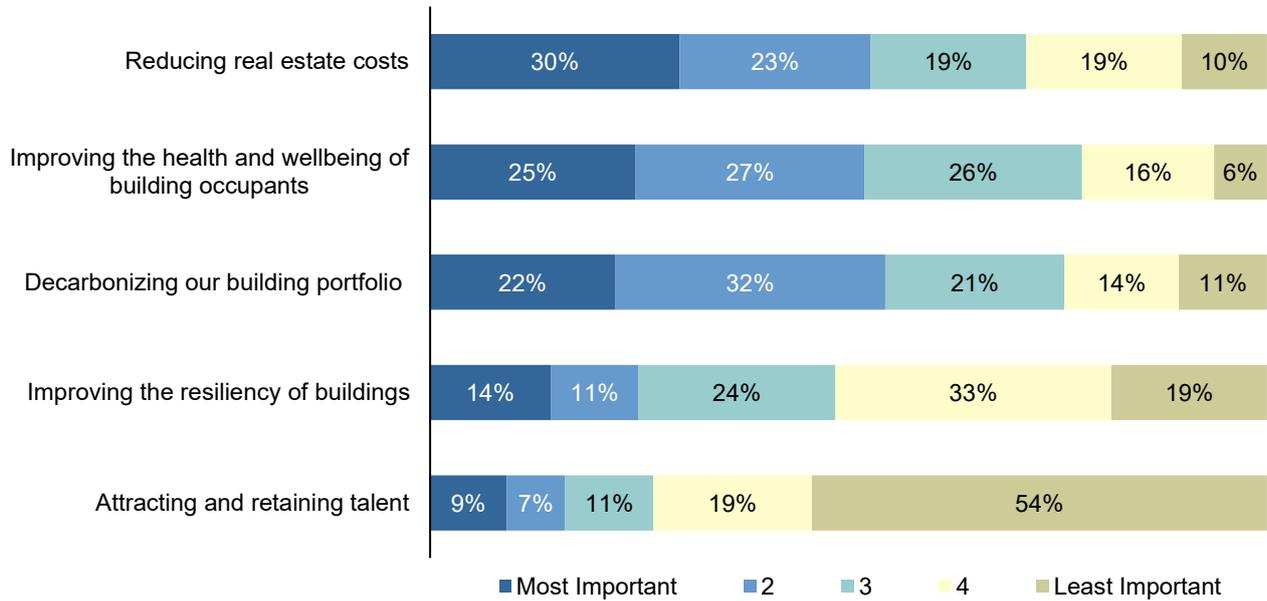
- **Optimizing future capital spending plans.**

In addition to improving the day-to-day operation of building systems, the IntelliSuite solution also supports capital expenditure planning. Technicians and service providers can examine the maintenance history of individual pieces of equipment and pinpoint problematic systems with regular issues. Armed with this knowledge on historic maintenance expenditure, service providers can inform capital expenditure planning, suggesting to their clients where to invest to reduce maintenance issues, replacing aged or problematic pieces of equipment.

FIGURE 2

Real Estate Strategic Objectives Over The Next Three Years

“Rank the following real estate management objectives by importance for your organization over the next 3 years (from 1 is most important and 5 least important)”



Note: Data labels are rounded to zero decimal places

Source: Verdantix Global Corporate Survey 2021: Smart Building Technology Budgets, Priorities & Preferences

N = 285

Firms Should Employ The IntelliSuite Solution To Drive Better Value From Building Systems

The IntelliSuite analytics solution fulfils several key business use cases, such as reducing energy consumption and improving maintenance efficiency. Verdantix believes the solution will deliver the greatest value to:

- Building operators targeting key business priorities and operational improvement.**
 Firms with the WebCTRL BMS in place should leverage the IntelliSuite solution to drive improvements in the maintenance tracking, monitoring and management process. By taking advantage of the cloud analytics capabilities provided by the CORTIX platform, businesses can improve their day-to-day operations through more efficient maintenance, which will minimize disruption and costs, reduce energy usage and improve building comfort. In turn, these improvements will positively impact financial performance and even contribute to wider business initiatives such as sustainability. For example, a large consumer electronics retailer that deployed the CORTIX platform to manage over 1,100 sites met the US Department of Energy’s Better Buildings Challenge goals in 2014, six years ahead of schedule.
- Facility management firms or service partners looking to improve their service provision.**
 Getting more value out of facilities contractors is a high priority in 2022 for 48% of real estate executives (see [Verdantix Global Corporate Survey 2021: Smart Building Technology Budgets, Priorities & Preferences](#)). Service providers looking to be more efficient with resources should explore the IntelliSuite solution to drive measured maintenance, sending out technicians only when required and applying tailored fixes that deal with issues before they become significant. This method is an improvement on traditional BMS servicing, which tends to follow a boots-on-the-ground service model, which can fail to

deal with issues promptly or, in some cases, even identify them (see [Verdantix Strategic Focus: The Future Of The BMS In The Age Of IoT](#)). The IntelliSuite solution makes service level agreement (SLA) adherence easier to track as service providers can provide evidence of the value of service delivered to end users through service reports.

- **Businesses targeting more informed capital expenditure strategies.**

Firms looking for more targeted capital expenditure planning across HVAC systems and components should employ the IntelliSuite solution to support their technicians. Beyond augmenting the short-term response to newly flagged faults, the IntelliSuite solution allows technicians to undertake analyses of building equipment, identifying the most problematic systems based on their fault history. Technicians can then make informed recommendations on which systems are in the greatest need of replacement or upgrades, helping firms invest their capital more strategically rather than reacting once the equipment has completely failed.



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